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November 11, 2009

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VIA ELECTRONIC DELIVERY

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Room TWA325
Washington, DC 20554

**Re: Notice of *Ex Parte* Presentations
ET Docket Nos. 04-186, 02-380; GN Docket No. 09-51**

Dear Ms. Dortch:

On November 10, 2009, Joseph M. Sandri, Jr., Senior Vice President of Government and Regulatory Affairs for FiberTower Corporation ("FiberTower"); Richard Engelman, Director, Spectrum Resources-Government Affairs, Sprint Nextel Corporation ("Sprint Nextel"); David Fritz, Senior Sales Engineer, Alcatel-Lucent; Caressa D. Bennet of Bennet & Bennet, PLLC, General Counsel for the Rural Telecommunications Group, Inc. ("RTG"); Karen Reidy, Vice President, Regulatory Affairs, COMPTTEL; and Michele C. Farquhar of Hogan & Hartson, LLP, Counsel to Sprint Nextel and Special Counsel to FiberTower and RTG, met with Paul de Sa (Chief, Office of Strategic Planning and Policy Analysis); David Goldman (acting legal advisor to Chairman Genachowski); and Stagg Newman, Thomas Koutsy, and Arnab Das of the FCC's Omnibus Broadband Team. Representatives Sandri, Engelman, Bennet, and Farquhar also met separately with John Giusti, legal advisor to Commissioner Copps; Louis Peraertz, legal advisor to Commissioner Clyburn; Charles Mathias, legal advisor to Commissioner Baker; and Angela Giancarlo, legal advisor to Commissioner McDowell.

During these meetings, the representatives discussed their Request for Expedited Consideration of their Petition for Reconsideration, filed in this proceeding on July 14, 2009, as well as the attached slides and revised proposed technical rules for point-to-point licensed, fixed use of the TV Bands White Spaces ("White Spaces"). The parties highlighted the urgent need for the Commission to act immediately to permit point-to-point licensed, fixed use of a portion of the vacant White Spaces channels to provide dramatically more cost-effective backhaul options and facilitate the goals of the broadband stimulus funding programs. The parties noted that often

15-to-45 vacant channels exist throughout rural areas, and reiterated their proposal to allow licensing for fixed use on UHF TV Channels 21-35 and 39-51 of: (1) up to six vacant White Spaces channels second or greater adjacent to a TV broadcast station in rural counties; and (2) any vacant White Spaces channels third or greater adjacent to a TV broadcast station in all counties.

The parties noted the extraordinary spectral efficiency whereby a single fixed TV White Spaces backhaul or transport link may result in enabling broadband in an entire unserved or underserved area. Specifically, the parties noted the benefits of licensed use of the White Spaces, including the exceptional propagation features of the band (which are ideal for lower-cost backhaul over much longer distances and offer significant cost savings compared to other spectrum bands) and the promotion of less expensive build-out costs in rural areas which could reduce the reliance on universal service support mechanisms to the extent they might be used to support broadband deployment. They also discussed their comparative survey of various microwave and TV Bands fixed path lengths available in Utah, including the existing number of links, the average and maximum length of the links, antenna gain, and antenna size issues, highlighting the many advantages of the TV Bands channels for point-to-point services such as backhaul. In addition, the parties described the smaller, lighter, and less expensive antennas available for the TV Bands. Finally, the parties noted that the 6 GHz band is already heavily used and, as a result, there would likely be many locations where additional 6 GHz links are unavailable, including in rural areas.

Pursuant to Section 1.1206 of the Commission's rules, this letter is being filed via ECFS with your office.

Respectfully submitted,

/s/ Michele C. Farquhar

Michele C. Farquhar
Counsel to Sprint Nextel Corporation
Special Counsel to FiberTower Corporation
and Rural Telecommunications Group, Inc.

cc: Angela Giancarlo
John Giusti
David Goldman
Charles Mathias
Louis Peraertz
Paul de Sa
Arnab Das
Thomas Koutsky
Stagg Newman

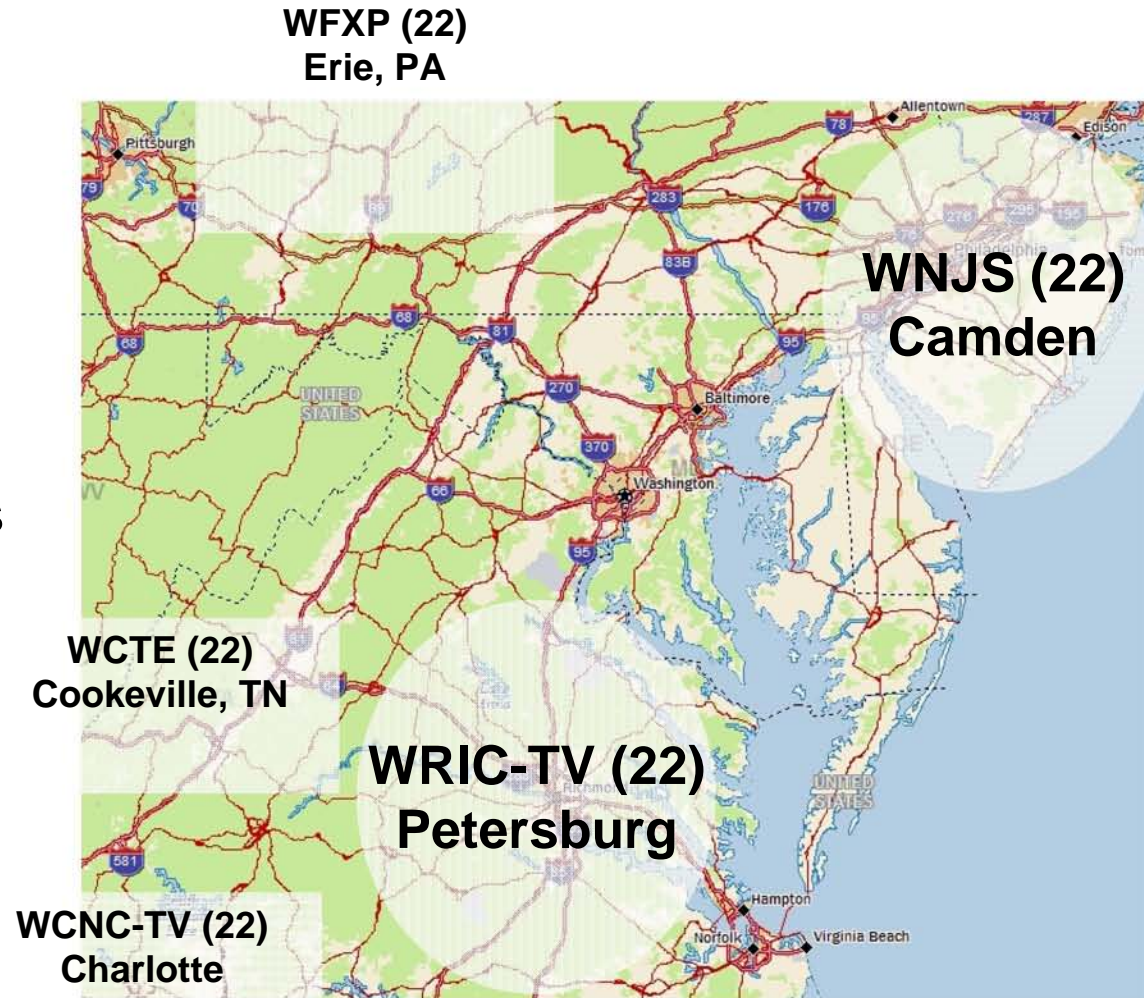
*Licensed, Fixed Use of the **TV White Spaces***

November 10, 2009



What is TV White Space?

- TV stations **must** operate at minimum separation distances to avoid interference
- TV “White Space” exists on frequencies and in locations where TV stations and other operations in the TV bands do not transmit

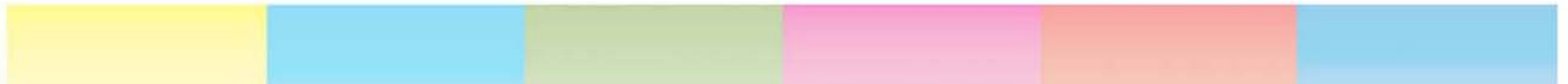


TV stations on Channel 22 near Washington, D.C.

What is TV White Space?

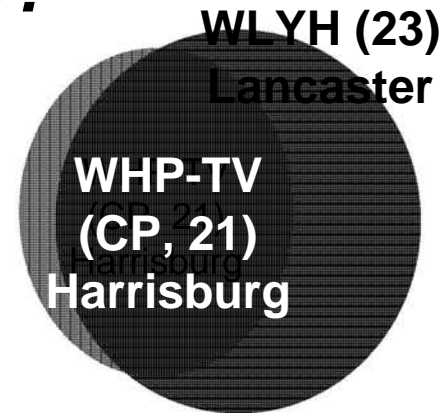
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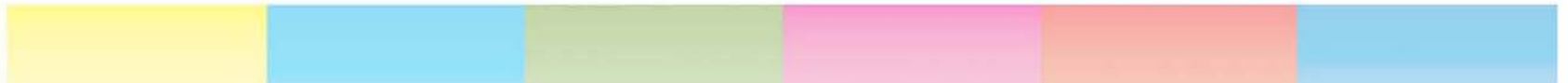


What is TV White Space?

- TV station co-channel and adjacent channels must be protected
 - 1,785 TV stations nationwide

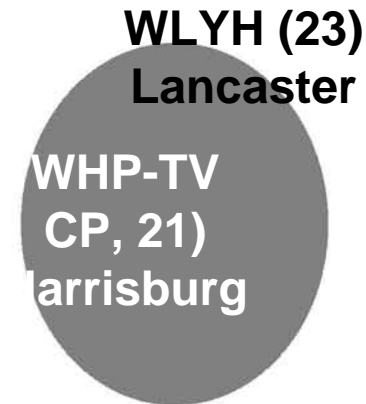


TV stations on Channels 21-23 near Washington, D.C.

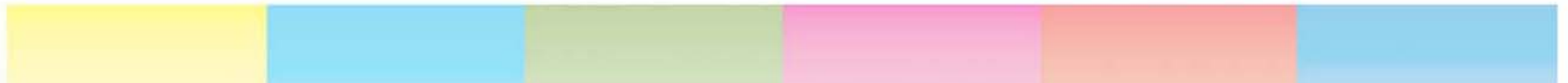


What is currently in TV White Space?

- TV station co-channel and adjacent channels must be protected
 - 1,785 TV stations nationwide
 - 2,939 Class A and LPTV stations
 - 4,391 TV Translators
- Approx. 300 broadcast auxiliary fixed links
- Cable TV head ends
- Land mobile radio services in 13 markets
- Offshore radiotelephone service along Gulf of Mexico
- Medical telemetry devices on TV channel 37
- Wireless microphones
- Soon, unlicensed TV band devices

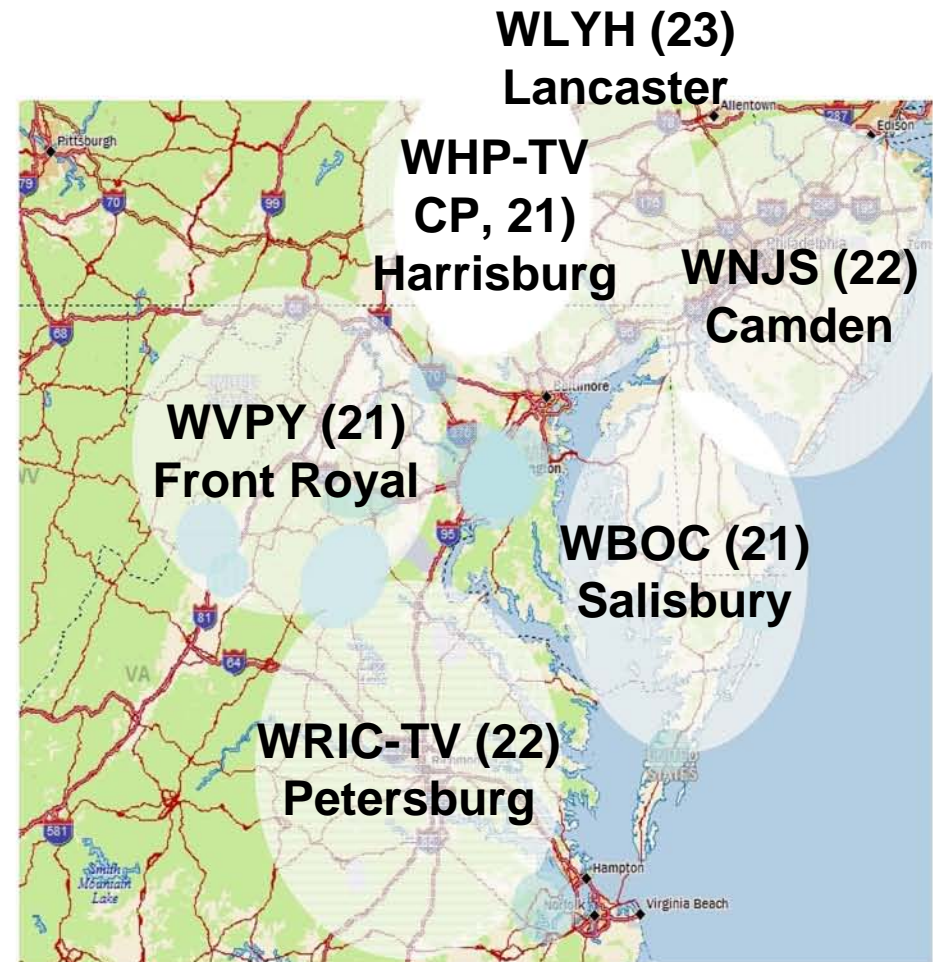


TV stations on Channels 21-23 near Washington, D.C.



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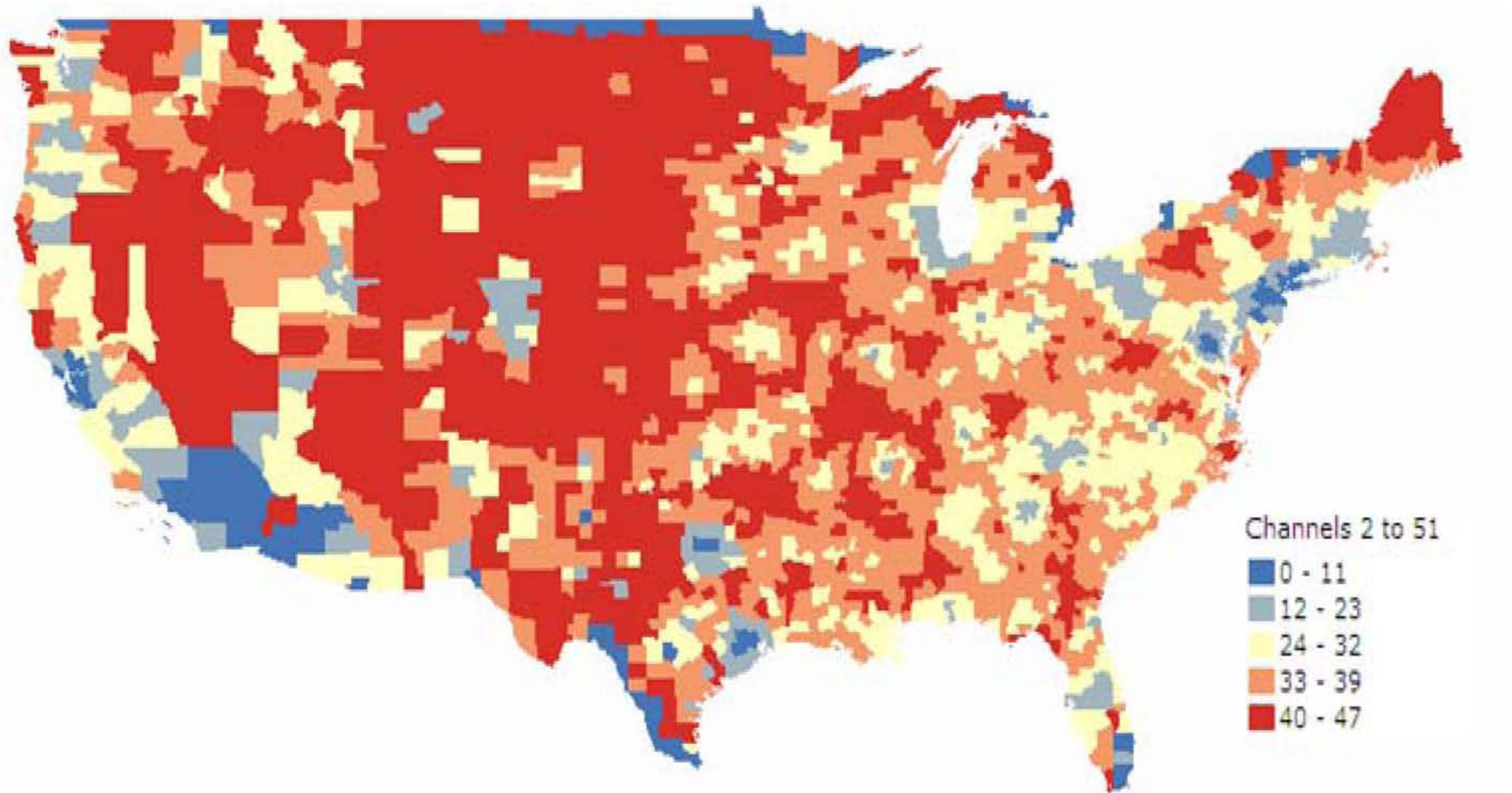
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TV stations on Channels 21-23 near Washington, D.C.

How Much TV White Space Exists?

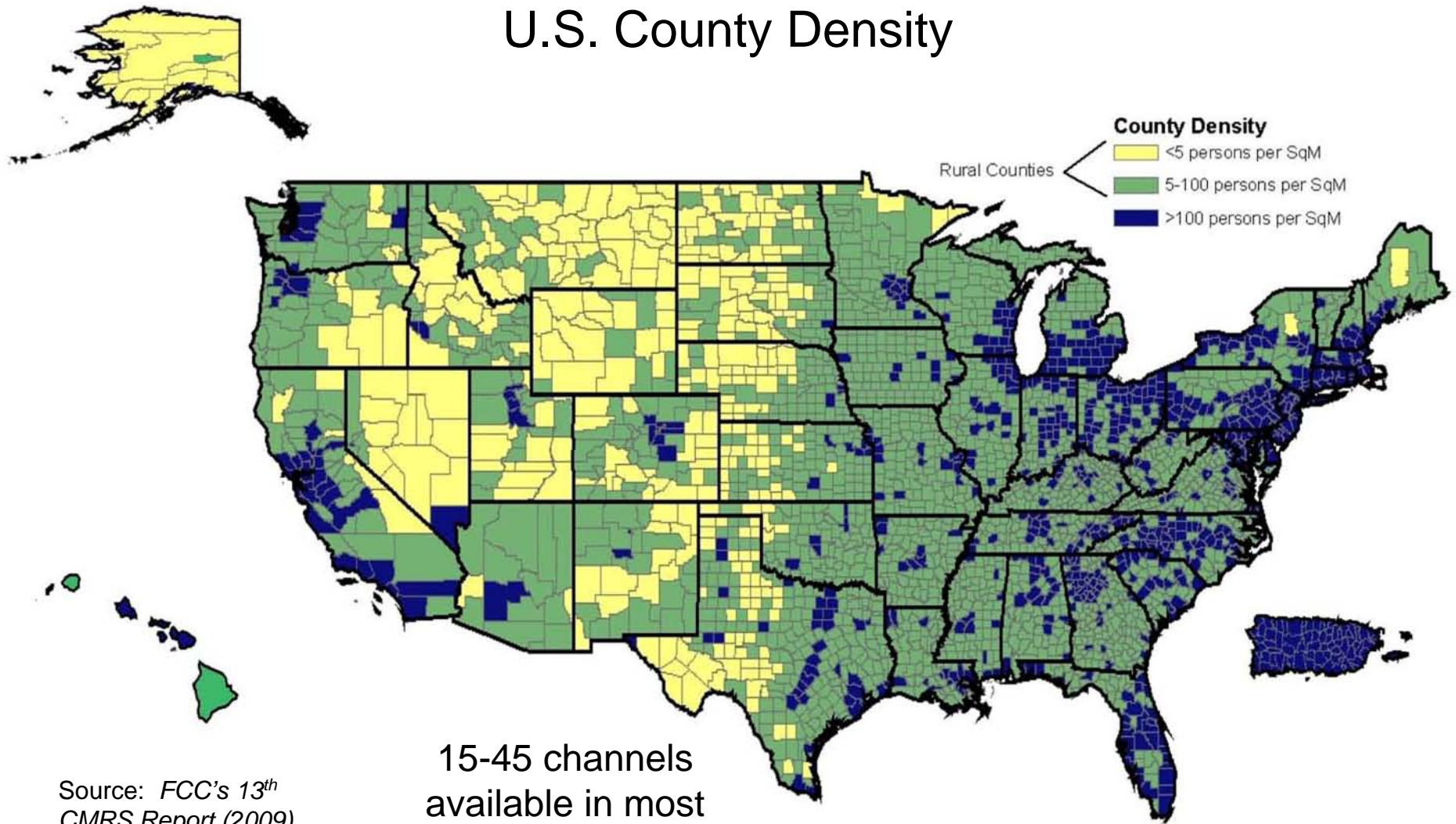
White Space Availability by County



Source: *Ex Parte Letter*, October 1, 2009, filed in ET Dkt. 04-186 by Wiltshire & Grannis LLP, on behalf of Dell, Inc., Microsoft Corp., and Spectrum Bridge Inc.

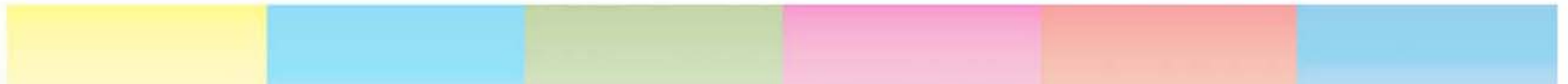
Substantial White Space in Rural Areas

U.S. County Density



Source: FCC's 13th
CMRS Report (2009)

15-45 channels
available in most
rural areas



Chronology of Major Events

- October 18, 2006 – FCC releases First R&O/Further Notice inviting comment on licensed operations in TV bands
- October 2, 2007 – FiberTower and RTG file their “White Paper” proposing a licensed, fixed model
- January-October, 2008 – Sprint Nextel, T-Mobile, NTCA, COMPTTEL, and the Rural Independent Competitive Alliance file letters of support
- June 25, 2008 – COMPTTEL, RTG, Sprint Nextel, and FiberTower submit draft of proposed technical rules

Chronology of Major Events

- October 29, 2008 – RTG, COMPTTEL, Sprint Nextel, and FiberTower submit revised proposed technical rules
- November 4, 2008 – FCC adopts Second R&O/MO&O
- March 19, 2009 – FiberTower, RTG, COMPTTEL, and Sprint Nextel file Petition for Reconsideration
- June 12, 2009 – DTV transition completed
- July 14, 2009 – FiberTower, RTG, COMPTTEL, and Sprint Nextel file Request for Expedited Consideration of their Petition for Reconsideration

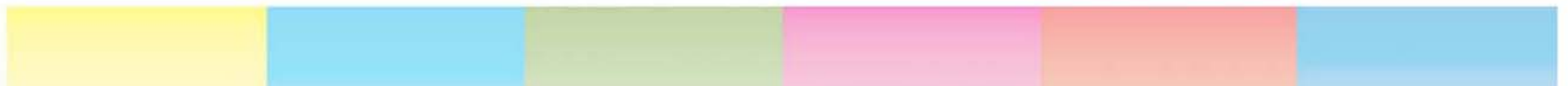


Benefits of Licensed, Fixed Use

- Ideal for long-range, inexpensive wireless backhaul, particularly in rural areas
 - Current high cost of backhaul is a key factor limiting wireless broadband deployment in rural areas
- Equipment available now; would spur immediate broadband deployment to unserved and underserved rural areas and benefit consumers directly
- Fosters regulatory certainty and protects incumbent users, particularly broadcasters
- Other unlicensed or licensed uses not precluded

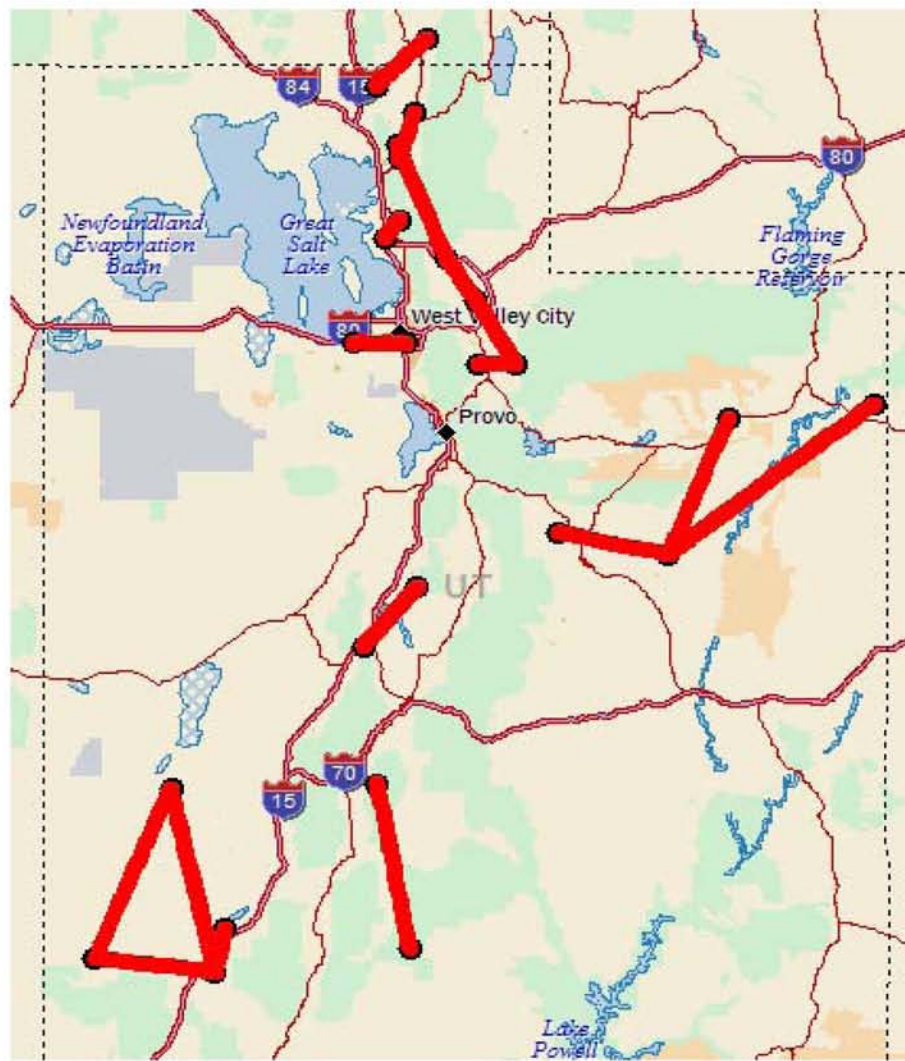
Licensing

- Site-by-site basis under Part 101
- Only on UHF TV Channels 21-35 (512-596 MHz) and 39-51 (620-698 MHz)
- Make available six vacant channels in rural counties; must be 2nd or greater adjacent channel to TV broadcast station
- Also make available 3rd or greater adjacent channels in all counties

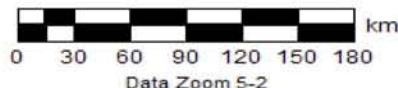


TV Band Links in Use Today

- 25 licensed TV band fixed links in Utah:
 - range in length from 11.7 km (7.3 mi.) to 131.3 km (81.6 mi.)
 - six links longer than 65 km (40 mi.)
 - average length is 51 km (32 mi.)



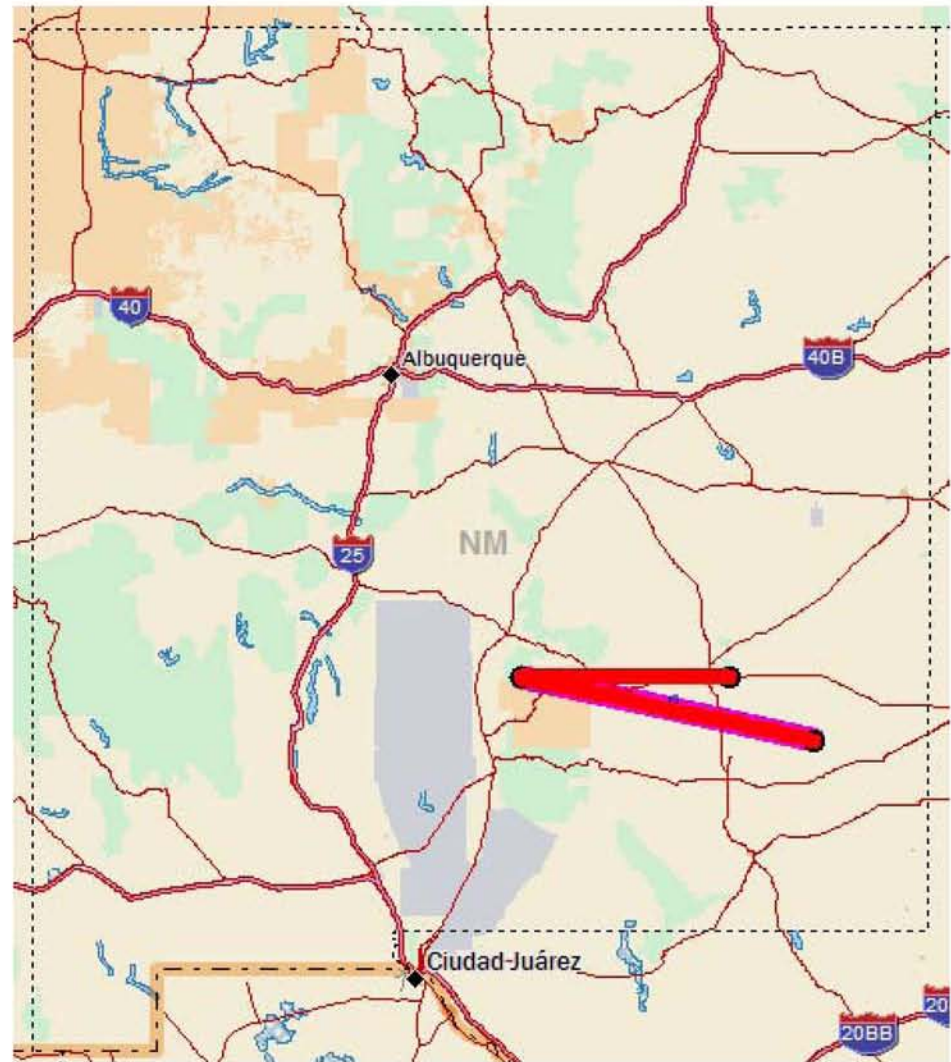
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Longest TV Band Link (116 mi.)

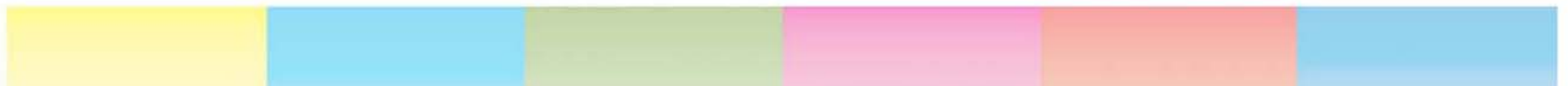
WPNI810:

- TV intercity relay, formerly licensed to Acme Television License of New Mexico
- two paths
- Buck Peak/Ruidoso to Roswell, 130 km (81 mi.)
- Buck Peak/Ruidoso to rural Chaves County, 186.5 km (116 mi.)
- Both use 62 dBm EIRP and 18 dBi gain antennas
- Buck Peak 2700 m higher elevation than rural Chaves County path end



TV Band Path Lengths

- With urban power limits (24 dBW/6 MHz), modeling indicates path lengths of ~40 miles w/ 99.995% reliability
- With rural power limits (35 dBW/6 MHz), modeling indicates path lengths of ~70 miles w/ 99.995% reliability
 - Distances can be greater from mountain-top locations
 - Distances can be shorter depending on terrain roughness and multipath conditions
 - Rain fading and atmospheric absorption not a factor at UHF (but are factors for microwave bands)



TV Band vs. Microwave Antennas

Smaller, Lighter, Less Expensive



PR-TV series

PARAFLECTOR® ANTENNA

15.5 to 17 dBd gain
470 to 862 MHz



PR-TV	Antenna	HP10-107-D1A
1.7 X 0.9 m (68" X 36")	Size	3 m (10 ft) diameter
38 lb.	Weight	575 lb.
\$1,664 for two, plus installation	Cost	\$26,960 for two, plus installation



HP10-107-D1A

Parabolic Shielded Antenna

48 dBi
10.2-10.7 GHz



Microwave Path Lengths

Using FCC's ULS database for Utah

Band	# Links	Avg. Length (km)	Max. Length (km)	Ant. Gain (dBi)	Ant. Size (Feet)
UHF TV	25	51.1	186.5	16-18	3'x5.5'
6 GHz	1,652	51.6	166	38.8-46.4*	6'-15'
11 GHz	682	25.1	99.7	33.7-49.8	4'-10'
18 GHz	318	11.9	48.1	30-48.5	8'
23 GHz	176	4.2	20	30-46.9	1'-4'

- 32 links > 130 km (80 mi.): all use 42-45.6 dBi gain antennas (10'-15')
- 313 links w/6' antennas: avg. len. 32 km, max 100 km

Spectrum Usage – What's Available

Frequencies	Typical Path Length	Maximum Channel Bandwidth	Maximum Channel Capacity (typical)	Minimum Dish Diameter	Typical Weight, including mount
400 – 700 MHz (in Progress)	30 - 75+ Miles	6 MHz	25 Mbps*	< 3x6 Ft (smaller available for different applications)	< 35 lbs
4 GHz	20+ Miles	20 MHz	DS-3+	8 Ft	500 lbs
6.1 GHz	20+ Miles	30 MHz	OC-3	6 Ft	360 lbs
6.7 GHz	20+ Miles	10 MHz	DS-3	6 Ft	360 lbs
10 GHz	10 Miles	5 MHz	16 x T1	2 Ft	33 lbs
11 GHz	8 Miles	40 MHz	OC-3	2 Ft	33 lbs
18 GHz	4 Miles	80 MHz	OC-3, OC-3+	2 Ft	33 lbs
23 GHz	2 Miles	50 MHz	OC-3	1 Ft	21 lbs
24 / 39 GHz	1.5 Miles	200-700 MHz	1 Gbps	9" (in market)	< 20 lbs

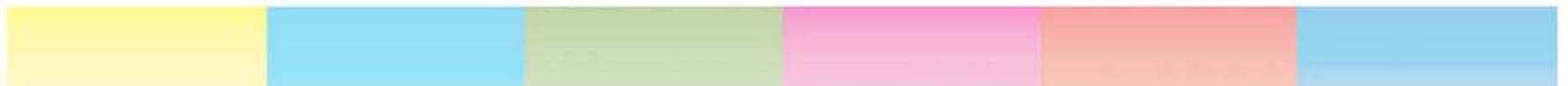
* Assumes 64 QAM. 50 Mbps achievable by using two 6 MHz TV channels or two antennas with different polarizations;

> 40 Mbps may be achievable with 128 QAM over shorter distances

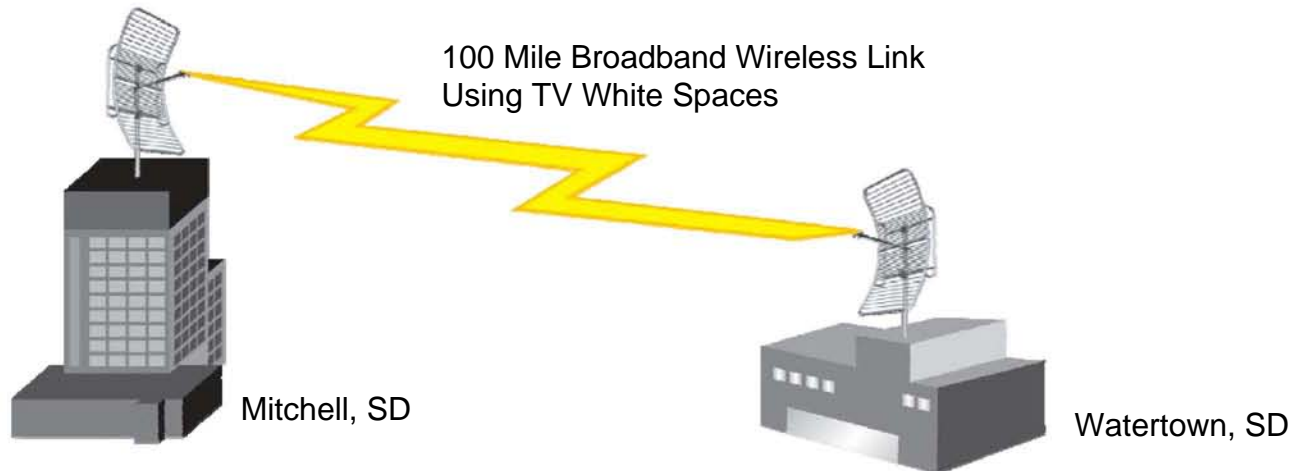


Data Rates

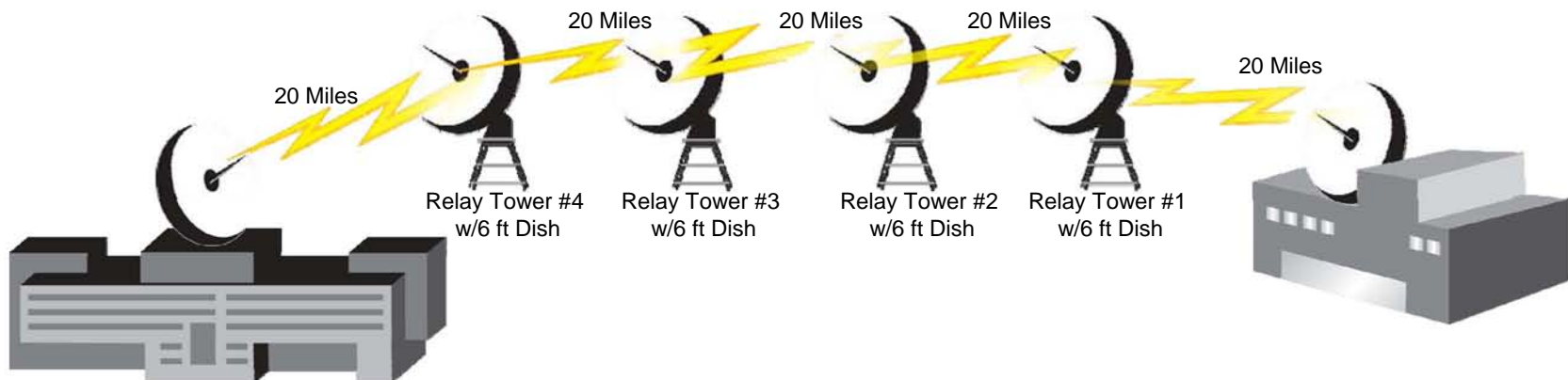
- When received signal-to-noise ratio is sufficient, links would be able to operate with up to 128 QAM (maximum data rate ~ 41 Mbps in 6 MHz channel)
 - 64 QAM likely to be more typical; max. data rate ~ 28 Mbps gross, and 20-25 Mbps net after coding
 - Rate could be doubled by using dual polarization
 - Rates could be less for longer links with low received signal-to-noise ratio



100 Mile Broadband Connection Comparison

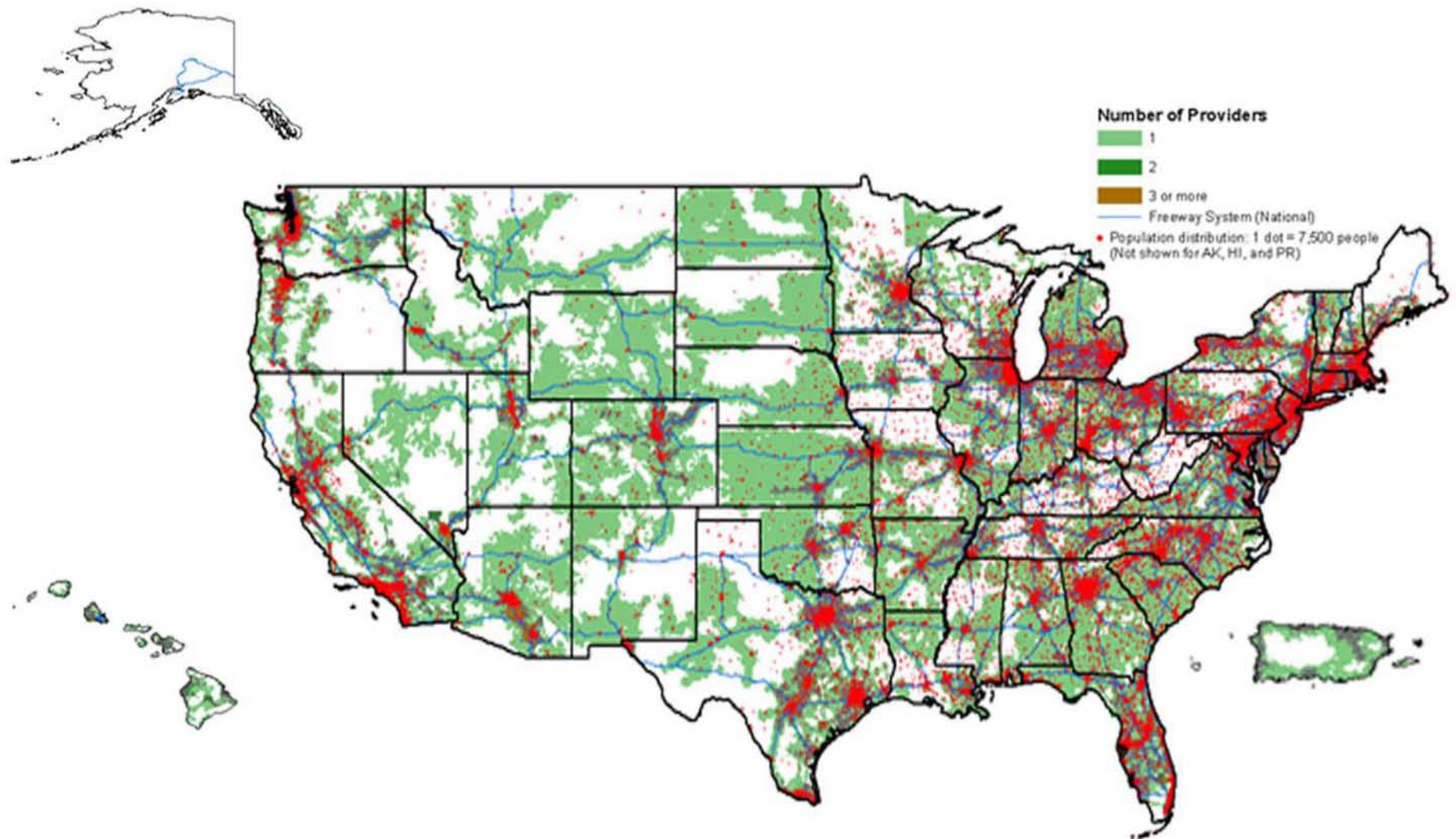


100 Miles using TV White Spaces (450-698 MHz): Small lightweight grill-style antenna fits on building/tower. Cost <\$100,000 - \$200,000



6 GHz or 3.65 GHz. Total cost: >\$3 million. Fiber Optic costs even more!

Population Areas w/o Mobile Broadband



Source: FCC's 13th CMRS Report (2009)